

AMERICAN BEE JOURNAL

46th Year

CHICAGO, ILL., MARCH 22, 1906

No. 12



PART OF APIARY OF A. K. FERRIS.



MR. A. K. FERRIS AT WORK.

(See page 251)



APIARY OF H. A. DOTY, CENTER LAKE, MICH.
(See page 250)



PUBLISHED WEEKLY BY
GEORGE W. YORK & COMPANY
 334 Dearborn Street, Chicago, Ill.

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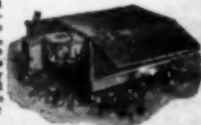
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(Entered at the Post-Office at Chicago as Second-Class Mail-Matter.)

Published Weekly at \$1.00 a Year, by George W. York & Co., 334 Dearborn St.

GEORGE W. YORK, Editor

CHICAGO, ILL., MARCH 22, 1906

Vol. XLVI—No. 12



Editorial Notes and Comments

Mild Winters and Locality

Jones says: "Last winter my bees used up an unusually small amount of stores, just as might be expected, for they always need the least stores in the mildest winters."

Smith says: "Last winter my bees drew heavily on stores, and I've always noticed that the warmer the winter the heavier the consumption of stores."

Jones is right; so is Smith. Jones lives far enough north so that the bees have very few winter flights, and even in the mildest winters they would be better off if they could fly oftener; so the amount of stores they need is measured by the amount of cold they must endure; the more cold the more fuel to keep them warm. Smith lives far enough south so the bees can always fly enough for their needs even in the severest winters. The winters always being mild, and the cold never severe, it doesn't take such a great deal of fuel to keep up the necessary heat, but when the bees get to flying it takes a good deal to make up the waste caused by so much motion, and so the milder the winters the more flying and the more stores used.

Just where is the line south of which Jones can not be found, and north of which Smith can not be found is a thing not easy to determine with accuracy; but taking the central and eastern part of the United States, it may probably be found somewhere between the 35th and the 40th parallel.

How About Your Bees' Stores?

"About this time of year," as the almanacs used to say, it becomes necessary to suggest to beginners, as well as to some others, that it would be a good thing to take an inventory of the bees' larders to see whether there is any danger of their running short. Especially in northern locations the thought is likely to be: "The severe cold is now letting up, it is warm enough for the bees to fly every day, and consumption of stores must be a good deal less than when it was cold enough to keep them in their hives all the time;" and it takes years to get over that thought. The fact is that the consumption is greatly increased, and for two reasons: One is that the bees are now active, and activity can only be at the expense of stores; the other is that it takes a

very large quantity of stores to feed the brood that is coming on in increasing numbers.

If your hives are 10-frame, or larger, and you know that they were heavy with honey in the fall, it may not be worth while to bother your head about them—the less they are disturbed the better. But if you are uncertain about it, and especially if you have 8-frame hives, better look into the hives the first day warm enough for bees to fly, and find out for certain. If far enough south, you may be surprised to find that the mild winter has caused more than the usual consumption.

What and How to Feed Bees in Spring

The best time to feed for spring needs, if feeding is necessary, is the previous fall. Unfortunately beginners are likely to be remiss in this matter, and when they discover in the spring that starvation is imminent, they begin frantically to inquire as to the what and how of feeding. The best thing, Mr. Beginner, is to have on hand from the previous year a stock of combs filled with sealed honey, ready to give to any colony that is lacking. Then give liberally, so that there will be more than enough to last till the fields offer a bountiful supply. But of course you haven't the sealed combs, and it isn't worth while to exasperate you by mentioning them, only it may help a little to make you look out for them the coming season.

Perhaps you may have on hand some candied honey. C. P. Dadant advises its use in this way: Smear it over the top-bars of the brood-frames, above the cluster of bees, and back of them. If put too far forward, it may drip down near the entrance, and favor robbing. Take pains to get at least one or two bees started on it by putting a little of it down within reach.

If you have no honey of any kind, then you must resort to sugar. Make it into candy, and lay it in thin cakes over the frames. It may also be fed in the form of syrup, and fed with Doolittle's division-board feeder or otherwise.

Caucasian Bees—Something Favorable

So far we believe we have published almost wholly unfavorable opinions concerning Caucasian bees—the new race that is being much lauded by some bee-keepers just now. We wish always to be entirely fair, and so now we propose to give somewhat of the other side—the favorable side—of these bees. We may say that we have not the slightest personal interest in them either way. They will have to stand or fall strictly on their merits, so far as we are concerned. We have no Caucasian bees or queens for sale, and if we had, we certainly should advise caution in

introducing them with a view to having them displace the "old and tried" Italian bees in this country.

Of course, bee-keepers, like progressive farmers, horticulturists, etc., who are ever on the lookout for new and better varieties of animals and plants than they now have, are looking for a better bee. And this is commendable. But it is always well, in such matters, to "make haste slowly," lest after expense and experiment only disappointment result.

What the American Bee Journal desires to do is to place before its readers both the pro and con information on this subject, and then they, after due care and consideration, must decide for themselves as to what they think best to do concerning the matter.

We wish here to reproduce something about Caucasian bees that appeared in *Gleanings in Bee Culture* recently, written by Messrs. D. E. Lyon and Frank Benton, both of whom seem to be entitled to speak with some degree of authority on the subject. It reads as follows:

CONCERNING CAUCASIANS—CHARACTERISTICS, MARKINGS.

For some time the writer has been much interested in reading various criticisms concerning the new Caucasian bees. A careful reading of the testimony thus far offered convinces me that a number of writers have expressed themselves on the basis of hybrids and purely-mated Caucasians. My visit to Washington last spring convinced me that in the above-named race we have a valuable acquisition to the present races of bees. My experience with them the past season has but confirmed me in the estimate of them then formed.

I can not but believe, and I have good reason for so doing, that a number of adverse critics of this race have not had the Caucasians in their purity; and yet, in spite of this, the testimony as to their gentleness has been of universal character, showing that a dash of Caucasian blood in other races is a boon of inestimable value.

If this be true of a hybrid with just a trace of Caucasian blood, how much more gentle can we not expect the pure stock to be?

The first objection we hear raised against Caucasians is that they are so gentle that they allow themselves to be robbed, and do not repel their enemies with vigor. In answer to this I would say that such has not been the case with the strain of Caucasians I possess, for by several trying tests I have proved them to be good defenders of their homes. In the early fall I purposely opened a colony of Caucasians, and in a little while about 50 robber-bees were flying over the frames; and when they would fly too near, the Caucasians would repeatedly jump up to them and try to catch them; and when they would succeed in getting one, the way they would ball and try to sting it was a caution. And yet, while all this was going on I was constantly lifting out the frames without veil, gloves, or smoke, and not the first Caucasian attempted to sting me, even though they appeared quite vicious toward their enemies.

To test them further I caught a grasshopper and held it on the top of their frames, and immediately they covered it; and in order to save its life I shook the bees off and sent the grasshopper on its way.

I can not think of any other test that would prove their ability to defend their homes.

The other objection we hear is that they are so much like the black bees that even an expert often can not distinguish them; and in answer to this I would say it is a question of being absolutely certain of having the real thing.

The three bands which, in my strain of Caucasians are so distinct, are of the pronounced light gray, which, with the slight shade of orange on the abdomen, make it easy to tell these bees from the blacks.

I think I have fairly met the only objections against this race, and would reiterate what I have often said—namely, don't condemn them without really knowing them; for the real Caucasians, purely mated, are just the reverse of what their opponents charge them with being.

They are a trifle smaller than the Italians, and have the oriental type form of the Cyprians; and as honey-gatherers they have with me done just as well as the Italians, and much better than many colonies of that race.

If Mr. Frank Benton were in this country he would have something to say in defense of this race, adding his

testimony to that already given by Dr. Phillips, to the good qualities of this noble race. Just before he sailed abroad he sent the following letter to the writer concerning the qualities and markings of the Caucasians, and in his absence I submit it as his estimate and defense of them:

U. S. DEPARTMENT OF AGRICULTURE, BUREAU OF APICULTURE.

WASHINGTON, D. C., March 25, 1905.

Rev. D. Everett Lyon:—I have your letter of March 21, asking about Caucasian bees. I can give only the main points in the character of this race, having had it under test on a comparatively small scale for two years past. I knew the race, however, by general reputation while I was in Europe and the East. The reports in the European journals at that time were just as may be noted regarding Carniolans in this country—quite contradictory; and as I had numerous other races under test in those years, I did not undertake a practical test of these bees until year before last. As I obtained in the autumn of 1902 three Caucasian queens, I had full colonies of the race with which to begin the season of 1903. Through additional importations of queens direct from the Caucasus, in Russia, I have further verified the observations which were made on the first lots obtained.

The most striking quality possessed by these bees is their remarkable gentleness. It is not equaled by any other race with which it has been my good fortune to meet. As a rule, no smoke will be needed at all in their manipulation, or, at most, a single whiff passed over the tops of the frames is quite sufficient to take away all sign of resentment. Under ordinary conditions the hives may be opened in any manner one chooses, at any time of the day, and the frames even roughly removed, and all manner of manipulations made without the necessity of resorting to smoke, and with no protection to hands or face; nor will a single bee offer to sting. The only time that pure Caucasians resent intrusion is when robbing has taken place and the hive is rudely jarred on a cool morning. At least such has thus far been my experience with them.

I can not say that they have shown remarkable qualities as honey-producers, but have thus far merely held their own fairly with the average of Italians and Carniolans. The same differences exist between individual colonies, as is the case with Carniolans and Italians, so that a selection in breeding as rigid as that to which the Italians have been subjected, would undoubtedly give strains of Caucasians that would fully equal or exceed the best Italians or Carniolans. The race is not very uniform in its markings. In this respect, in fact, it hardly equals the Carniolans, the yellow or rusty red bands cropping out constantly. There is, however, a peculiar marking which enables one to recognize Caucasian blood quite readily after he has acquired some skill in the matter. The dark color is of a peculiar dull leaden gray, and gives the bees a very ringed appearance. You have doubtless noticed Carniolans or blacks which have fallen into water-troughs, crept out, and become partially dried. These might be taken to resemble in color the Caucasian workers, as you will notice that the dark rings around the body show more distinctly when the fuzz is dampened. True Caucasians are slightly smaller-bodied than Italians or Carniolans—in fact, have the type form of the oriental races. The queens vary somewhat, as do the Carniolans, from a golden orange yellow to a black color, inclining, however, more to the dark type—dark bronze being rather typical. The drones are very black, and considerably smaller than Carniolan drones. The race is a very prolific one, and the workers seem active and evidently keen-scented, since they find sweets that are left exposed quite as soon as do bees of any race.

I have formed a very excellent opinion of these bees, and believe particularly that they will form excellent crossing material with the Cyprian race. We need males of a gentle race to mate with the queens of any or all of the oriental types; and I think in the Caucasians we have a type that will coalesce with the Eastern races.

FRANK BENTON,
In Charge of Apiculture.



Miscellaneous News & Items

Mr. C. P. Dadant, President of the National Bee-Keepers' Association, made this office a pleasant call on March 9, when in Chicago on business. Mr. Dadant has the unusual distinction of being one of the leaders in bee-keeping in both America and Europe. And it might be difficult to tell on which side of the Atlantic the name of Dadant is best known among bee-keepers.

Apiary of H. A. Doty.—When sending the picture, Mr. Doty wrote thus:

The photograph of my apiary was taken from the chamber window of the dwelling-house looking northwest. This apiary has quite a little history connected with it. The bees have been kept near here for the last 10 years. About

6 years ago I purchased the land where they now are. Before moving the bees I built the board-fence seen in the picture, to protect my neighbors and a public street on the north side of the lot, as it is a well-known fact that bees flying over any obstruction are less liable to come in contact with teams or pedestrians. But some of my neighbors took exception to that high board-fence and tried to have it removed. Like all good doctors, the first remedy was to remove the cause—the bees. A petition was sent to the Board of Health that said bees were detrimental to the public health; to have them removed; also that high board-fence.

Our local "doctor," the Board of Health, looked the grounds over and weighed every point pro and con, and decided he could see nothing that would injure the health of anybody. The bees were neat and clean, and the fence was neither dangerous nor vicious. But this decision did not suit my neighbor on the other side of the fence. More stringent measures must be taken. Our village council was induced to pass an ordinance to prohibit the keeping of bees in the village of Central Lake in any form, for any purpose whatever, and imposing a penalty of a fine of not less than \$2.00 nor more than \$20 for every colony of bees kept in violation of this Act.

I have always tried to live as a law-abiding citizen, but this law brought me within its toils. I was arrested and brought before a local Justice for keeping bees in violation of this ordinance. I secured counsel and met my opponents in battle array. The Justice decided that such a law was unconstitutional, as it deprived a citizen of carrying on an honorable industry in any lawful manner whatever. This decision did not suit the complainant in this suit. It was but a short time before the second warrant was issued, and I was brought before another Justice, who, being a near relative of the complainant, and not knowing the facts, we had reason to believe the decision was rendered before the warrant was issued. We decided that any argument before this court was of but little use. The Justice acknowledged his inability to decide the constitutionality of the question involved, and for the violation of said ordinance I was fined \$20; but I did not pay said fine, and carried the case to the Circuit Court. Here it hung fire for over one year, but finally the case was brought to trial. The Circuit Judge decided in accord with the first Justice, that the law was invalid.

Now the battle is over, the victory is ours, and the bees still hold the fort. I am afraid it is not fought to a finish, however—

For he who fights and runs away
Will live to fight another day.

My bees are my main support now in my old age. For the last three years I have been living upon borrowed time. I have climbed the mountain, passed the summit, and now am going down almost to the bottom on the shady side; but with the help of my good wife I hope to live and care for my bees a few years longer.

H. A. DOTY.

Surely, persistency is one of the strong points in Mr. Doty's make-up. And it seems to have won, at least for a time. It is surprising how some neighbors can be so cantankerous—so utterly unreasonable. We hope Mr. Doty may live yet many years, and finally completely overcome all opposition to his keeping bees so long as they are not real disturbers of the peace and quiet of the neighborhood.

Mr. Alson Secor, son of Hon. Eugene Secor, of Iowa, called on us recently. "Alson" is assistant editor of that great farm monthly, *Successful Farming*, published in Des Moines. A small part of his work is to look after the bee-department of the paper, which, of course, he knows how to do—that is, if he profited by his father's apiarian instruction when at home, and no doubt he did that, and along other lines also. *Successful Farming* is to be congratulated on having been successful in securing Mr. Secor as one of its editors.

Crofts & Reed are new advertisers in the American Bee Journal. They are all right, as are all others advertising with us, else we would not advertise for them. Give Crofts & Reed a trial order, and also our other advertisers. Kindly mention the American Bee Journal when writing advertisers.

The Wisconsin Convention Report is crowded out this week. We expect to continue it next week.



Contributed Special Articles

How Can We Rear Better Queens?

BY A. K. FERRIS.

THE answering of this question should be the study of every queen-breeder and honey-producer who wishes success.

The first thing we will consider is the selection of the queen from which to breed. In this we will select 2 or more queens, whose bees excel the others in amount of honey produced, prolificness, whiteness of capping (if comb honey be our object), and vigor—a point too often overlooked. Do not breed from a queen whose bees will allow brood to starve with capped honey in the hive.

Often a large percent of the brood is only half fed during the slack between fruit-bloom and clover, and what is the result? Some are starved to death, and a still larger amount never have that vigor necessary to good honey-production.

After having considered the good as well as the objectionable points in selecting breeders, then rear a few queens from the one selected to be the queen-mother, and a batch of drones from the one to be the drone-mother. Mate the queens to these drones, having them isolated from other bees at least 3 or 4 miles, or having entrance-guards on all other colonies.

Carefully keep tab on all hives containing these queens, and if those reared excel the others in honey-production and other desirable points, the choice of breeders has been a good one, and the whole apiary should be requeened from these two breeders.

When we find a queen-breeding queen and a drone-breeding queen, whose offspring, when mated, reproduce the desirable qualities, they are of great value, for such queens have to be at least 1½ years old before they are thoroughly tested, and it is hard to find breeders that reproduce the good points.

Often the queens reared from an apparently excellent queen and mated to drones of another equally good will not reproduce the good qualities of the parents in a single particular. Therefore, when we find two breeding queens that reproduce their excellent qualities, they are too valuable to be disposed of.

The next question that naturally presents itself is, How to rear these queens? I have tried all known methods, and have found none to produce so large a percent of good queens as the Doolittle system described in "Scientific Queen-Rearing."

I find, however, some still argue that queenless bees rear just as good queens as any, and for the benefit of those who are interested, I will give my experience:

I purchased from a breeder who emphatically urges the use of queenless bees for cell-building, a \$5.00 queen, also the booklet on "Improved Queen-Rearing," and after thoroughly studying it I reared a large number of queens, and as I had made some 35 colonies queenless all the same day, I gave each a cell that would hatch in a couple of days. Twenty-one of these cells were from the Alley method, and the rest from the Doolittle method. All had been made queenless the day previous to giving the cells; but, to my surprise, all the Alley cells were torn down, while all the Doolittle-reared cells were accepted. This set me to thinking, and I determined to know the secret.

So I selected an extra strong colony 3 stories high, and after fixing a solid division in the center, I divided the bees equally and operated one-half on the Doolittle system and the other half on the Alley system, and while it was the bees from the same queen, and all in the same hive, the difference in the cells was apparent, and as these were hatched in cages I found that the difference in the queens was noticeable enough to be detected by people who were strangers to bee-keeping.

I have never had, as a rule, as good queens when reared by queenless bees, and I have had two \$5 queens as breeders, and neither they nor their offspring (when reared by the Alley method) ever occupied over 8 Langstroth frames of brood, while queens reared by the Doolittle system from these same two queens occupied from 9 to 14 Langstroth frames with brood.

In making artificial cell-cups there is a point frequently overlooked, and that is the inside diameter. Three-eighths of an inch I find to be about right, and in these cells I invariably

find a large lump of royal food remaining after the queen has emerged.

In operating the Doolittle method I prefer from 20 to 30 Langstroth frames of brood, with a large share of it hatching for cell-building. In the two accompanying cuts you can see a part of my cell-building colonies as in operation June 17, 1905. [See cuts on first page.—Ed.]

From past experience I am prepared to say that with better queens our yield of honey per colony can be greatly increased. Wisconsin.

A Quick Queen-Finder—Methods of Feeding Bees

BY C. DAVENPORT.

THE past season, I also solved another problem that I have thought, worked, and studied over ever since I have kept bees. This is a queen-finder. With this device I can find a queen quicker than one could believe possible. Last summer in the presence of three reliable witnesses I found the queens in 4 very strong colonies in the following time: First hive, 87 seconds; 2d, 64 seconds; 3d, 109 seconds; 4th, 96 seconds. This did not include moving from one hive to the other, and of course, I worked faster than I usually would; but instead of being about the worst drudgery connected with our pursuit, it is a pleasure to find queens with this device. It becomes one of the things we would not sell for money if we could. No matter whether the queen is black or yellow, this device gets her, and gets her quick. It will find a queen in a strong colony just as quickly as it will in a weak one. The frames are not taken out or distributed in any way and it is impossible to lose or injure a queen.

But my intention was, in this article, to describe a method of early spring feeding that I have practiced the last 4 seasons. Of feeders and ways of feeding, there are about as many as there are bee-keepers. Although this method is very simple, I do not remember ever seeing it described. Where early spring feeding is necessary, it has, aside from sealed combs, given better results than any method I have ever practiced.

I use a cheap grade of extracted honey if I have it on hand; if not, granulated sugar and water, mixed half and half. After the sugar has thoroughly dissolved, I take half-depth extracting combs and fill them with this food by pouring it on the combs from a height of 2 or 3 feet. I have a tank for this purpose large enough to hold a number of combs at once. Two or 3, or as many of these filled combs as are deemed necessary for a colony, are then placed in a super and this super is put *under* the hive. The entrance can then be contracted as desired.

If extracted honey is used in place of sugar it is warmed up and thinned or reduced with water. I put in about a third water if the honey used is thick.

The great advantage of this method of early feeding is that the colony is not disturbed, and no heat is lost, as there is with any kind of overhead feeder. In fact, often when I deem it necessary to feed a colony soon after it is removed from the cellar, and I have sealed combs on hand, if the weather is not favorable, instead of taking out and inserting another comb, I place it *underneath* the colony, in a hive or super.

And now I am going to write something in regard to early spring feeding, or late fall feeding, that I have no doubt will be a great surprise to many, and that, in my opinion, will be worth their time in reading this, for some who may in the future have to feed early or late; and it is a surprise to me that with as many closely observing men as we have in our ranks, nothing much has been said about it before. The way I came to observe the matter was this:

A few years ago I purchased a few colonies of a neighbor who was moving away. This was late in the fall, and most of these colonies were very light in stores. They were fed up on buckwheat extracted honey. In order not to excite the whole yard they were fed about 5 pounds each evening towards sundown. They took the feed quite readily, but after some of them had been fed 15 pounds or more they did not seem much heavier than before feeding. Upon investigating the matter, I found that a large percent of the bees that took the feed flew out and never returned. The nights were quite cool, and probably many were chilled, but many also came out and flew such a distance from their hives after it was so dark that I do not believe they would have gotten back that night, any way, no matter how warm it was.

Since then, when feeding early or late, I always close the hive so that no bees can get out. They will take and store

the feed just as well, and by the next day they are all over their excitement. They will worry some after the hive is first closed, but soon get over it.

In my mind there is no question that the reason so many colonies that have to be fed in early spring perish, or dwindle away, is that a large percent of the bees that take the food fly out and perish before they are able to return.

Southern Minnesota.

[Mr. Davenport is hereby requested to describe his quick queen-finder, for the benefit of the readers of the American Bee Journal.—EDITOR.]

Experience in Buying Queens—Disinfecting Introducing-Cages

BY J. E. JOHNSON.

ON page 97, Mr. L. A. Smith says he has had experience in buying queens, and has not as yet found an honest queen-breeder. My experience has been just the reverse. For about 20 years I have bought queens occasionally, and have always received fairly good queens, but during that time I have bought only one tested queen. I get untested queens, as I think a young queen that has only begun laying is less liable to be injured in the mail. However, I got a tested, purely mated queen from England last summer, and she proved to be all right. She came in a fairly large cage, and had a retinue of 20 or 25 bees, and was 14 days on the way.

I always aim to get my queens in June or July, as I think better queens are produced during that time of year. I never order queens of a man who advertises untested, and also "select" untested, as I think no queen-breeder should send out an "unselect" queen, so I "cut out" that kind of a man entirely, because I want to get a queen from a man who values his reputation better than to send out two grades of untested queens, which means poor, and not so poor.

Last year I got 12 queens from one man at 50 cents each, and every one proved good, and although all were untested queens they all proved to be purely mated; but I don't think I ever had an order for queens filled right away until last year. Then my order was filled the day it was received, except 4, which were sent 2 days after the order was received. The breeder I sent to advertised in the American Bee Journal that he could fill orders "by return mail."

Now, I believe we should have a little patience, and expect 5 or 10 days' delay unless the breeder advertises to send by return mail, as the orders may chance to come in too fast just at that time; but if a breeder is thoughtless enough to delay the order 30 days, or over, without giving notice and offering to send the money back, he ought to be exposed. However, I think in the end it will cost the queen-breeder more to be dishonest and careless than to deal as he would be dealt by.

I have queen-cages that are disinfected that I use for introducing, and no matter who the queen is from, she is placed in the disinfected cage for introduction.

To disinfect a cage, take 40 parts water and 1 part carbolic acid. Lay the cage in this solution for 1 hour, and it will be safe from all disease. Of course, the cage should be thoroughly aired and dried.

I believe we should give more attention to having young queens, as I find that often the colony that spring dwindles has an old queen. The bees don't seem to supersede their queens until the old queen is failing pretty fast, and that is often not soon enough to suit me; but I believe we can rear longer-lived queens in a 3-frame nucleus than in a baby nucleus.

It would, no doubt, be quite profitable for every bee-keeper to rear his own queens, and thus he would get valuable experience, and probably good queens.

Williamsfield, Ill.

Full Weight vs. Short Weight Section Honey

BY L. V. RICKETTS.

SO, Mr. Hasty, on page 794 (1905), thinks that I am working at a good matter, yet he can not fall into my procession. I am sorry for that, for I like good company. I think I will have to go it alone, then, for awhile, at least. What I am advocating is right, and right will always win in the course of time.

Mr. Hasty seems to convey the impression that I am

trying to have each and every section weigh exactly one pound. I am only advocating a change from the present size— $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{4}$ section, which, when fairly well filled with separated honey weighs (on an average) only 14-2-3 ounces, or 22 pounds per case of 24 sections—to one enough larger so that when filled as above, it will weigh (on an average) 16 ounces, or 24 pounds per case of 24 sections. These sections may range in weight from 15 to 17 ounces each, but should average 16 ounces, or not less than 24 pounds net (weight of sections included) per case of 24 sections, for "No. 1," separated honey. Sections weighing from 13 to nearly 15 ounces should be graded as "No. 2," as to weight, and should average 14 ounces per section or not less than 21 pounds per case. Sections weighing from 11 to nearly 13 ounces should be graded as "No. 3" as to weight, and should average 12 ounces, or not less than 18 pounds per case.

Mr. Hasty says that with him occasional ones are over one pound weight now. Those occasional ones are the sticking point; how easily our conscience will permit us to sell hundreds of sections weighing only 14 or 15 ounces as pound sections, but when it comes to an occasional one weighing $16\frac{1}{2}$ or 17 ounces it pinches us, and we squirm.

He says that it is hardly right to balance off extra-weight ones against scant-weight ones in the same case, and so push the difficulty onward to the grocer. Is it not better than to balance off scanty weight ones against scantier weight ones, as is being done at present?

If all were like Mr. Hasty—who prefers to sell by weight instead of by the section, and even deducts the weight of the wood in the section—there would have been no use of writing this article. For many reasons (some of which are stated on page 695 (1905), I consider the $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{4}$ bee-way section by far the best size to use. An ideal outfit for the production of comb, extracted, or chunk honey, or all in the same apiary, is either the 8 or 10 frame Langstroth hive (according to locality, etc.), with supers of the same length and width as the hive, and $5\frac{1}{8}$ inches in depth. A super of this depth is just right for the $4\frac{1}{8}$ -inch tall section when used with section-holders having bottom-bars $\frac{1}{4}$ inch thick, and allowing a $\frac{1}{4}$ -inch bee-space above the section.

This super will hold frames $4\frac{7}{8}$ inches in depth, and allow a $\frac{1}{4}$ -inch bee-space above the frames. These frames are suitable for the production of either extracted or chunk honey; and the super and frames will serve as a shallow or separable brood-chamber, which, for those preferring such a hive, is convenient indeed. Thus, as stated in a previous article, we have a super for extracted, section, and chunk honey production, as well as a shallow or separable brood-chamber, all in one.

That it pays to work for both comb and extracted honey in the same apiary, there is no doubt in my mind. By the use of the outfit above mentioned, one is enabled to run an apiary with much less expense for supplies than when a different super is used for extracted than for section honey. It is the intention of the writer to use the above-described outfit in a limited way during the coming season, and to use it exclusively hereafter.

Pullman, Wash.



Odors Among Bees—Some Observations

BY ARTHUR C. MILLER.

THERE appeared an interesting article from the French of Mons. L. Forrester, translated by Mr. Dadant, and dealing with odors among bees, on pages 567 and 632 (1905). The first point which arrests attention is that the author did not approach his experiments with an unbiased mind. He was at the start convinced of what he set out to demonstrate, and naturally saw in his experiments only those facts supporting his preconceived ideas.

Among his recorded experiments he says he repeatedly washed his hands to remove all trace of human odor—an impossibility to start with. Next he smeared his hands with the juices from crushed drones, and in some cases the bees of the colony from whence the drones were taken failed to sting him, and in other cases they stung. Nothing positive there. Again, in two or three instances when hands so smeared were presented to a colony alien to the drones, stings resulted; but while he attributes the painful reception to the presentation of alien drone odor, he seems to forget that living alien drones would have been well received.

He cites the harsh reception in their homes of bees washed in alcohol, which treatment he assumes removed the home odor. The painful and fight-inducing effect of such a bath he entirely overlooks. But he says that after a sufficient time has

elapsed bees so treated having, he assumes, recovered their natural odor were favorably received by their sisters. Such reasoning is hardly worth noticing had it not been so widely copied.

Let me cite some facts falling under my own observation:

Hands coated with a solution of propolis from one hive will pass unscathed in every hive. Where is the home odor? The human odor is sealed in by the varnish. Sometimes the bees will assail the moving hands but will only strike, and not sting.

A bee slightly injured by the moving of a frame is not infrequently set upon by her sisters. Surely she has neither lost nor acquired an odor. But she often shows a fighting spirit.

Queens caged in a colony to which they are to be given are often killed, and queens given without caging are no more frequently killed.

Bees often freely pass from colony to colony. Often we can unite bees of different colonies without difficulty, and again bees from one colony separated from their sisters for a few hours, even though on their own combs, sometimes fight to a finish on being reunited. This is notably so with Cyprians. Confined bees accept aliens without trouble. Cannot confined bees smell? All evidence points to the possession of bees of an acute sense of smell and a strong antipathy to many foreign odors, but it does not consequently follow that odors govern their attitude toward each other. Because certain animal and other odors greatly excite them we cannot conclude that the odor of an alien bee is the cause of her sometimes killing reception. It is far more rational to say that the alien recognizes the strangeness of the surroundings, and acting on the defensive soon finds a sister ready to knock the metaphorical chip from her shoulder.

There is as much, or more, evidence against the "odor theory of queen reception" as currently taught, as there is for it, as will be seen if it is only looked for without prejudice or bias.

Providence, R. I.



Mr. Hasty's Afterthoughts

The "Old Reliable" as seen through New and Unreliable Glasses.
By E. E. Hasty, Sta. B. Rural, Toledo, Ohio.

BINDING VOLUMES OF PAPERS.

The binding proposed by Mr. Ross is capable of making a nice volume, evidently. If you don't care for looks it's a much quicker way to drive a few wire nails through the backs. If the contemplated volume is thin, choose nails that will go clear through and clinch. If the volume is thick, choose nails that will not go quite through, and drive some from each side. Page 119.

SOMEWHAT HIGH BEE-KEEPING.

Bee-keeping on the Alps, 3300 feet up, looks very natural and Yankee-like—as well as interesting. I'll play that the keeper knows better than to shake a swarm into a hive direct—only using the empty skep as if it was a basket, from which he will run the bees into one of those nice frame hives. Front of No. 6.

PROLIFICNESS AND HONEY-PRODUCTION.

C. P. Dadant is a little bold in saying that prolificness and large honey-production *always* go hand in hand. "Usually" would be a more conservative word. I think we do hear sometimes of bees that habitually come out strong in the fall, but with almost no honey till it is given them from other colonies.

Very interesting to hear of the long, long struggle to find out how to import queens direct from Italy.

And so too much in-breeding produces blind drones. Queer. Page 120.

SOMETHING MORE ABOUT "MOUSES."

Doolittle on the mouse (big man on small beast) is just as interesting as Doolittle on a section of honey. The mice of Northern New York and those of Northern Ohio seem to be about the same. No. 2 among mice is like the white man among men—goes round the world. My impression is that most of our corn-shocks and stumps are peopled by the

same fellow. Whether (in this locality) we have any field-mouse apart from No. 2—I'm at sixes and sevens on that question. But the mouse that quickly dies of terror when caught in a trap that doesn't hurt him a bit—can he be of the same species as the mouse that has no thought of dying—that spitefully gnaws up everything within reach, and royally fights you to the last? It hardly seems possible notwithstanding they look so much alike. My impression is that we have here another burrowing mouse apart from No. 4; bigger, and also plentier; not so much resembling the mole; about the same size as the house-mouse, but with a stub-tail instead of a long one.

Doolittle is usually accurate, but I am unreasonable enough to entertain some doubts whether he is perfectly sound on mouse diet. I think the house-mouse rarely eats honey except when near to starvation—but sometimes peels cappings off for pastime when time hangs heavily on his hands. However, poor mouse does face starvation at close range pretty often, in which condition he naturally has to eat anything he can get. I also suspect that more than one species will pull dead bees out of combs—at least when hard up for something to do. I wish Prof. Bigelow would tell us what he knows about mice.

Right that the choker-trap is best to reduce numbers quickly when mice are plenty; but for getting the last one, when he's old and wise and wary, the wire-box with a door that snaps down is better. Feed him round the outside every day (careful not to give quite so much as he could eat), and sooner or later his suspicions will fade away, and he will be caught. Page 120.

APIARIAN READERS AND READING.

Our Editor, on page 117, makes bold to give readers a little advice on *how* to read. Right. Give 'em some more of it. The few who read all, and the larger few who dip into every article and finish all they find interesting, don't need much advice, but the others do. Half of them waste a good share of the little time that they do spend at reading. No acquaintance with its different departments; and no idea where to find what they want. No method or plan at all except to dip in at random and read till time expires, or till "that tired feeling" comes. Hope it's a small one, but it's to be feared that there is a still worse class of readers—the proud-of-their-martyrdom class. Vain of not needing to read bee-literature at all, because they know all about bees—but take a paper just to be a good example to the brethren. Never open the paper except they first whistle for all the languid and bored feelings which human shiftlessness is capable of, to come and keep them from getting either profit or pleasure. What will they get, pray? The answer to this query and the solution to the doggerel lines below are one and the same word:

I am, and yet in sober truth I'm not.
A deep, deep riddle's what I am, I wot.
I cause, oft and again, girls giggling glee.
A certain brand of man gets mad at me.
Because of me the jealous husband slays;
And jealous wives spend frowning, weeping days.
On festival evenings fair shoulders they don me.
When God made the world he hung it upon me.

There, now! That's what you'll get if you don't read the American Bee Journal with proper zeal, gumption and respect.



**Southern
Beedom**

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

What Line of Work Shall We Take Up?

Who is not interested in the welfare and the progress of our industry—bee-keeping? I am well aware of the fact that every bee-keeper who is in the business for the "bread and butter there is in it," has this matter at heart, and is ever ready to find or devise something that will make his work less and easier, yet increase his returns from the apary. And we do not blame him. That is just what all of

us should be doing—study a little more the things we are going to do.

But how shall we begin to improve upon our old ways and methods? or what line of work shall we take up? There are many, to be sure; for instance, "Short cuts, and their application," could be made into valuable discussions. There are many ways of doing things. Every bee-keeper has his or her way, and these are just the ones we want to hear about. How to cut off the corners, how to "get there" quicker and easier, and then make *more* money, is what all of us want to know.

"Breeding and improving our bees" would be a good thing to discuss thoroughly, devising some good plans of procedure for the average honey-producer as well as the specialist breeder. A better grade of bees in our apiaries would mean *more* money for us.

A subject that has been of much interest to me has been the planting for bee-forage—such plants that will yield nectar during times of scarcity or entire dearth. These need not necessarily yield a crop of surplus—for it is almost certain that *very* few could be found that would do such a thing—but in many localities only a light flow to tide the colonies over successfully during the honey-dearths from the spring flows to the fall honey-flows would mean thousands of dollars for the bee-keeper in such localities.

At the Texas State Experiment Station a test of over 30 different kinds of honey-yielding plants were experimented with for a period of 3 years in succession. Small plots of each were planted, and at intervals of one month apart throughout the season, making 4 plantings a year. Among these were the clovers—red, mammoth red, alsike, white, sand, Japanese, suckling, yellow trefoil, white and yellow and yellow sweet, and alfalfa; Japanese and American buckwheat; Desmodium, Euphorbia, Astragalus (2), mustard, sage, borage, cowpeas (4), velvet beans, Japanese Dolichos, Australian salt-bush, Resedas (2), catnip and a few I do not recall just now. Many of these did not grow, especially the clovers. Apparently the atmosphere and the seasons did not agree with them. Besides, it gets too dry in the summer in most Southern sections for clovers to do well, except the sweet clovers and alfalfa. Some of the other plants grew, and a few bloomed, bees working on them, but they were of little importance.

The experiments, sifted down, left white and yellow sweet clovers for planting and scattering in waste-places and along roadsides and fences and for forage; Japanese buckwheat and the cowpeas for cultivation, both for honey and forage, preferably drilled and cultivated in rows here in the South; and alfalfa for irrigated districts. The latter yields some honey where not irrigated, but is then not important as a honey-yielder.

Buckwheat does not always yield, sometimes only sparingly, depending a great deal upon the season and atmospheric conditions. The average hot summer is too dry for it to yield, as warm, moist weather conditions are most favorable for it. I have cut buckwheat for hay just about the time the majority of the seeds in the heads were beginning to harden, and cured it. When fed to stock, especially if a large amount of kernels have been matured, they eat it greedily; also green.

The cowpeas yield abundantly just at a time when needed, for they gave the bees something to do during June, July and part of August, when nothing else was to be had for them. These can be planted at intervals of a month apart, which would give a succession of bloom during the season. As drouth does not affect them as much as most other vegetation, they should be given a further trial. It will be well for me to state, in this connection, that of the different varieties tried, the one known commonly as the "whip-poor-will pea" is the best. The others form more vine and a denser growth, to the detriment of the bloom that the bee-keeper seeks most. I might also say that it is not necessary for the cowpea plant to be full of blooms to yield nectar, as this is mostly secreted by external nectar-glands on the terminal flowering stalks, and the nectar can be plainly seen in large quantities within reach of the bees.

My preference has been a strong leaning toward sweet clover. As it can be sown in waste-places and along fences it seems to be the cheapest and most practical for the bee-keeper. Cultivated land is rather expensive in most localities to be devoted to honey-yielding crops, and then, too, many a bee-keeper hasn't any land.

Any or all of these honey-yielders I have mentioned should be given a thorough trial in the different sections of the South—on a small scale at first, then if they prove successful for cultivation, and of value to the bees, larger areas can be devoted to them. As the soils and climatic

conditions vary to such an extreme in the different States of the South, and also in different sections in any one State, it would be necessary and most advisable to test the different plants in each locality.

These, now, are some lines of work that it would be well worth considering by the bee-keepers, and I should be glad to hear opinions from them from all over the South.



Canadian Beedom

Conducted by MORLEY PETTIT, Villa Nova, Ont.

J. B. HALL

One of Canada's Foremost Bee-Keepers

The following sketch of Mr. J. B. Hall is kindly furnished by one who is most intimately acquainted with him—Mr. Hall's daughter:

J. B. Hall, Apiarist, Woodstock, Ont., is a native of Norfolk, England, born in Yarmouth, in 1833. He never saw a honey-bee until he arrived in America, in 1856. During a period of indoor employment his health failed, and in 1872 he invested in one colony of bees. In the hands of a beginner the bees died, but Mr. Hall, who, to use his own words, had lost the color from his cheeks, the flesh off his bones, and the sweet out of his temper, regained the color, and increased in weight from 132 pounds to 187; of the temper he remains silent, but the bees must have improved it in proportion to his flesh.

This venture went so well with him that the next year he purchased 3 colonies, and with an enthusiastic friend bought an extractor.



J. B. HALL.

They extracted so energetically that the bees were left no winter supply, much to the surprise of their owners. The bees died of starvation, for these deluded men thought, like their fellow mortals, that honey flowed all summer long.

But to follow the old motto, Mr. Hall tried a third time in the next year with 8 colonies. Repeated failures had purchased wisdom, and all went well until the next summer, when the apiary was invaded by foul brood. A neighbor had unwittingly purchased it along with a \$30 colony of Italian bees. Mr. Hall knew no cure, so he destroyed the apiary utterly.

However, he was not to be beaten, and in 1876 he made a fresh start with 4 colonies. From this on all went splendidly, and Fate no more intervened to prevent his becoming an apiarist. Three years later he quit his business and devoted all his time to the production of

honey. Since then he has won his bread and butter solely by the business of the apiary.

In 1883 the North American Bee-Keepers' Association held their annual meeting in Toronto. Mr. Hall had a feeling that our friends to the south of the international line were abused of the idea that Ontario produced nothing but snow, Indians and bears. For the purpose of their enlightenment, he proceeded to Toronto with 22,000 pounds of his year's crop. The United States visitors were exceedingly surprised, and accordingly delighted with the great Ontario exhibit of splendid honey. Dr. C. C. Miller and A. I. Root were there and saw Mr. Hall's thick top-bar. They reported to the bee-papers, and it caused a great laugh. Some said Mr. Hall must live in a wooden country to get so much to put in his comb-frames. Now they all see the utility of the method, and Mr. Hall is satisfied.

He uses two kinds of hives. One is the New Heddon, the other is an 8-frame hive, the inside measure of the frame being 18½ inches long and 10¼ deep. He much prefers the larger frame.

You wish to know his hobby? Well, it is flowering plants, and the neighbors say if J. B. Hall touches a plant, it is sure to prosper.

H. L. H.

J. B. HALL—THE THOROUGH BEE-KEEPER.

The following tribute is from Mr. H. E. Hill, editor of the American Bee-Keeper, who at one time was a student of J. B. Hall:

MR. MORLEY PETTIT—

Dear Sir:—In 1885 I had the honor and extreme pleasure to spend the season with Mr. Hall, in his "Woodstock" apiary, and had cultivated a degree of acquaintance bordering on friendship for several years previous to this more intimate association.

It is, I think, noteworthy in this connection that Mr. Hall should have lived to the age of 73 years, and then have to cross the Atlantic to see a honey-bee; but, if I remember correctly, he saw his first bees in Canada. It must have been a case of ardent love at first sight, for his interest seems to have been constant ever since. In 1876 he became a specialist in bee-culture, and has confined himself exclusively to the pursuit of his chosen vocation.

Should you ask me as to Mr. Hall's dominant trait as displayed in business, I should unhesitatingly reply, "thoroughness." There is but one way in which to execute any task that Mr. Hall may have in hand, and that is exactly as, in his opinion, it should be done. Slipshod, half-hearted, slovenly methods are not tolerated. He knows no middle ground in the performance of his work. There is the beginning and the finish; and when he has finished it is safe to bank that the job is done.

As I recall this painstaking care of my venerable and esteemed friend, I doubt not that this inherent characteristic is largely responsible for the successful apiarian career now to his credit. From the leveling of every hive-stand with a spirit-level in the spring preparatory to putting out the bees, to scraping and crating the crop in the fall, as well as the loading of cars with his product, every detail had the nicest attention.

Although jovial in manner socially, kind-hearted and affectionate in his home, and a firm believer in hours for ample recreation and rest both for himself and his employees, during business hours nonsense and carelessness are relegated into exile, and strenuous business ethics are observed throughout.

Since the opportunity is available, I am inclined to note some of Mr. Hall's shortcomings also, for, in common with other mortals as I see it, he is not without his faults, the most regrettable of which is his almost morbid modesty. Were it not for this unfortunate characteristic, the realm of beedom might profit by his writings. This condition, however, is one for which Mr. Hall can not be held entirely accountable, as he "swore off" writing for the press years ago, largely because of the habit of some editors in so closely editing everything that the substance was sacrificed upon the altar of syntax and diction.

Mr. Hall is a great admirer of flowers—in fact, floriculture is his one great hobby. Like other florists, he has two names for about every kind of flower that grows—one that we have all heard, and one nobody outside of the business ever heard of or would attempt to pronounce.

I believe Mr. Hall was first to introduce the thick top-bar, and also the inventor of the zinc-wood honey-board.

He is a gentleman whom it is a real pleasure to know, and an honor to count as a personal friend.

H. E. HILL.

Ft. Pierce, Fla.

A Queen-Bee Free as a Premium.—We are now booking orders for Untested Italian Queens to be delivered in May or June. This is the premium offer: To a subscriber whose own subscription to the American Bee Journal is paid at least to the end of 1906, we will mail an Untested Italian Queen for sending us one new subscription with \$1.00 for the Bee Journal a year. Or, we will renew your subscription to the American Bee Journal for a year, and send a fine Untested Italian Queen—both for \$1.50. Now is a good time to get new subscribers. If you wish extra copies of the Bee Journal for use as samples, let us know how many you want and we will mail them to you. Address all orders to the office of the American Bee Journal.

See Langstroth Book Offer on another page of this copy of the American Bee Journal.



Our Sister Bee-Keepers

Conducted by EMMA M. WILSON, Marengo, Ill.

Bees Wintered Well

I have just returned from my winter sojourn in Cuba and Florida, and find my bees have wintered well—not having lost a single colony. My sister bee-keeper visited me to-day—Mrs. A. L. Amos—and tells me her bees are in fine shape, so I think, as a whole, the bees have wintered well on the summer stands in Central Nebraska.

Westerville, Nebr., March 9. JENNIE BOOKNAU.

Honey for Freckles and Liver Spots

For freckles and liver spots: Eight ounces of pure extracted honey, 2 ounces of glycerin, 2 ounces of alcohol, 6 drams of citric acid, 15 drops of essence of ambergris. Apply night and morning. If this does not remove them, you will probably be obliged to use some good proprietary bleach. There are bleaches that are perfectly harmless.—MME. QUI VIVE, in Chicago Record-Herald.

Least the supply of honey should not suffice for all the freckles in existence, it may be well to add that in the same column Mue. Qui Vive says:

"Genuine beauty is never shadowed by a freckle any more than the sun is eclipsed by a candle."

Thinks She Wants Large Hives

MY DEAR MISS WILSON:—I am thinking of buying a new hive and don't know just what I want. My idea is to run one colony only for extracted honey the coming summer. I do not care much for increase. My idea is a larger hive and a "rousing" big colony. Do you recommend a 2-story dovetail hive for this purpose? If so, how do you manipulate such a colony when you have 2 brood-chambers, in looking for queen-cells, etc.? If you do not recommend such a hive can you recommend a good one for the purpose above mentioned?

Also, are the 2-story hives both for comb or extracted honey made in the double-walled chaff-filled? In a catalog I have, all the hives described seem to be single-walled, and would require much more careful packing than the double-walled hives in winter.

The frames in my 8-frame Hilton hives are Hoffman frames, and I shall continue to use the same in whatever hive I buy.

Also, for extracted honey, do you recommend the deep or shallow frames?

My reason for changing hives is to get a larger colony than an 8-frame hive can accommodate, and also more honey per colony. I shall run mainly for comb honey, but want one colony for extracted honey for medicinal uses. In case I like the larger hives better after a trial, I shall buy enough to take all my bees.

Also, are the large hives better than the smaller ones in a city? Things which apply in the country are sometimes quite wrong in a city.

The fall and winter up to last Friday have been unusually mild, and the bees have been out some nearly every week. Two weeks ago last Saturday the thermometer was somewhat above 50 degrees, and the bees were all out for a good flight. Since then the thermometer has been down as low as 6 degrees below zero, and the bees are "sleeping."

Grand Rapids, Mich., Feb. 1. ELSIE A. CUTTER.

The decision of the question as to what is the best hive for you depends a whole lot upon what you are going to do. If you do not intend to give the bees a great deal of attention, but expect to leave them a good deal to their own devices, then the larger hive, by all means. It allows a larger stock of provisions on hand at all times, with less danger of starvation. But if you expect to give the bees all the attention they need, then the smaller hive may be the better,

especially for comb honey. By the addition of another story you can have all the advantages of the larger hive, using only one story when it may seem best. With 2 stories you have room for even stronger colonies than with one story of the larger hive, and then, when the harvest comes, you can reduce to one story, throwing the bees largely into the supers.

If only one colony is to be run for extracted honey, better have the brood-chamber the same as the rest, for the sake of uniformity, even if not just the best for extracted honey. And for so small an amount of extracting, you may as well have extracting-frames the same as the brood-frames.

City or country would hardly make any difference as to the kind of hive.

When brood is in 2 stories, you must lift off the upper story to find queen-cells in the lower story. But you will not have much of that do, for there will not be much hunting for queen-cells before reducing to one story for giving supers.

You will find the single-walled hives easier to handle; and the packing for winter is not a very serious matter. You will probably not find chaff hives made so as to be used part of the time single story and part of the time double story. It may not be out of place to say that we often have colonies so strong that a 10-frame hive would not accommodate them, but with the 8-frame 2-story they can run up to 12 or 15 frames if they want to.



Doctor Miller's Question Box

Send questions either to the office of the American Bee Journal, or to Dr. C. C. MILLER, Marengo, Ill.

Dr. Miller does not answer Questions by mail.

Formalin for Foul Brood

What became of the formalin treatment for foul brood, that was so popular a year or two ago? I have not seen it mentioned for some time. Did it prove unreliable? CALIFORNIA.

ANSWER.—Formalin, or formaldehyde, could hardly be considered as a cure for foul brood, for it would kill all bees and brood submitted to it. Its proposed use was to save the combs of foul-broody colonies from being melted up. Some reported that combs thoroughly fumigated with the drug would have no trace of foul brood left, and could be given with safety to healthy colonies, and others were not so successful. The probability is that it rightly used it may disinfect diseased combs; at least that is the belief of some good authorities.

Drones and Brood in Hives in February

It is now Feb. 25—a very warm day—and my nephew looked at his 3 colonies, and found 2 of them with lots of sealed and hatching brood. They are Italians, and have drones hatched out, 2 queen-cells capped over. One cell was just hatched out, and he found the young queen, but forgot to look for the old one. Will the young queen be of any account? Were they superseding the old queen in February, or will they be likely to swarm, as the maple-buds are swelling? The colony is extra-strong for this time of the year, and the old queen was very prolific. I have been keeping bees about 10 years, and never heard of such a thing. I am taking 3 bee-papers, and do not remember having read about it. ILLINOIS.

ANSWER.—There is nothing unusual in finding brood in the last week in February, but it is very unusual for a young queen to be reared so early. It was probably a sort of forced superseding, the bees recognizing that the queen had so far failed that they must immediately take steps to supersede her. A queen reared so early is not likely to prove of great value, and it will be well to keep an eye on the colony lest it be found queenless in April. Swarming is not at all likely in February in Central Illinois, no matter how strong the colony.

Temperature in Center of Winter Bee-Cluster—Making Combined Comb-Guide and Starter

1. In Gleanings for April 1, 1896, page 307, Mr. Doolittle gives 92 degrees as the lowest temperature the bees will allow in the center of the cluster even on frosty nights, and from actual tests he has concluded that 92 to 98 degrees is the usual heat in the center of the cluster of bees.

2. I had no thought of asking questions when I started to write,

but a Texas man recently said that Doolittle taught him how to make a wax comb-guide and starter combined that had been satisfactory to him for years, but said he would not tell how it was made. Can you not tell us how?

CANADA.

ANSWERS.—1. Thanks for information as to temperature, and from so reliable a source.

2. One way to make a starter and guide is to nail on the underside of the top-bar a thin strip coming down to a sharp edge, half an inch or so deep, and by the aid of a small brush paint it with hot wax. Another way is to hold firmly, or else tack lightly to the underside of the top-bar a square strip which is kept so thoroughly wet that wax will not stick to it; then pour into the angle or trough thus made melted wax, holding it in such position that when slightly cooled and the strip removed there will be a thin starter of wax hanging down from the center of the top-bar a half inch or so. One trouble with any arrangement of this kind is that there is nothing to hinder the bees from starting drone-comb if they feel so inclined. Much more satisfactory is a starter of worker foundation.

Wiring Frames With Starters Only—Sweet Clover

1. Is it of any benefit to wire frames when using only starters?
2. Will the bees build straight combs from starters?
3. Will sweet clover grow here in Wisconsin? or, does it grow here?
4. If so, where can I get sweet clover seed?
5. Is it tender or hardy? Will it freeze as easily as does corn?

WISCONSIN.

ANSWERS.—1. Yes, the wires will strengthen the combs, although there is the objection that you can not count on the bees following the wire with the septum, whereas when full sheets of foundation are used the wire is always fastened in the septum, or the middle wall of the comb.

2. Ye—es, at least pretty straight. They will start straight at the top, and if the hive stands perfectly true from side to side you can count on their following that general direction, only toward the bottom they will build the comb more or less corrugated, or waving. They seem to do that for the sake of greater strength. But for all practical purposes you can get combs straight enough without full sheets of foundation. But you will have too much drone-comb with it.

3. I think it is scattered all over Wisconsin.

4. Watch the advertising columns of this Journal. Or, address some of the supply-dealers. Perhaps they can furnish it.

5. Hardy—very hardy. Sweet clover would only laugh at a freeze that would kill corn. I think I've known it to be killed only in two ways. One year I prepared a piece of ground in fine shape, sowed sweet clover with oats, and it made a fine stand. Next spring there wasn't a spear left. The ground was so nice and soft that it heaved and pulled up all the sweet clover by the roots. In the solid ground of the roadside I never knew it to winter-kill. Another year I had a piece mowed close to the ground when it had started from the seed and was nearly a foot high, and it finished it.

Drone-Comb in Upper Hive-Stories

I have quite a lot of nice, straight drone-comb. I used some last season in upper stories for extracting, but the bees did not seem to fill it as readily as they did worker-comb in the same hive; but I know one season is not sufficient to test anything in bee-keeping, hence I would like to have the experience or opinions of others longer in the

business than I have been. Would it make any difference to the bees whether they had drone or worker comb to store surplus in, in an upper story, said upper story being a full hive-body, and the queen confined to the lower story?

INDIANA.

ANSWER.—There ought not to be a particle of difference generally, provided the only difference was in the size of cells. A difference might be in this way: If a drone-comb and a worker-comb were put side by side in the same super, each of them having been in use the same number of years, and there were any noticeable difference (doubtful whether there would be), I should expect the one most promptly accepted to be the worker; because most brood would have been reared in it if both were in the brood-chamber, and when bees show any preference it is for comb with a good stock of cocoons. A difference might be shown in another way: Have none but worker-comb in the brood-chamber, a small amount of drone-comb in the second story, and an excluder between the two stories. In such a case I have known the bees to fill the worker-combs in the super and keep the drone-comb empty, probably because they wanted the queen to lay in it. But in general practise you'll find drone-comb in a super filled as promptly as worker-comb.

Use of the Bee's Sting—Increase by Dividing

1. I am sending a clipping from the Minneapolis Journal, in regard to the real use of the bee's sting. If you know anything more about it I would be pleased to hear it.

[The clipping referred to is as follows:—EDITOR.]

REAL USE OF THE BEE'S STING.

"The bee's sting is a trowel, not a rapier," said a Nature student as he helped himself to honey. "It is an exquisitely delicate little trowel with which the bee finishes off the honey-cell, injects a little preservative inside and seals it up.

"With its trowel-like sting the bee puts the final touches on its dainty and wonderful work. With this sting it pats and shapes the honey-cell as a mason pats and shapes a row of brick. Before sealing up the cell it drops a wee bit of poison into the honey. This is formic acid; without it honey would spoil.

"Most of us think the bee's sting, with its poison, is a weapon only. It is a weapon secondarily, but primarily it is a magic trowel, a trowel from whose end, as the honey-cells are built up, a wonderful preserving fluid drips."

2. My brother and I started with 2 colonies, and now we have 7 in winter quarters, all strong and in good shape. They did very poorly here last year, it being too cold and rainy. We took off about 100 pounds of honey. We wish to increase our number of colonies to 15 in the spring, by dividing. What is the best way for us to do it? Would Mr. W. W. Somersford's method be all right? IOWA.

ANSWERS.—1. — good many years ago Rev. W. F. Clarke, a Canadian bee-keeper, announced as facts the ideas contained in the clipping, namely, that bees use their stings as trowels to work wax, and before sealing up each cell of honey drop into it poison from the sting. He never gave any proof for such belief, and when remonstrated with, replied, "Well, I see the bees busy in the cells, what else can they be doing?" The whole thing is silly foolishness.

2. Yes, but in working any plan of increase successfully it will be worth much to be thoroughly familiar with the principles you will learn from your text-book on bee-culture.

Reports and Experiences

Good Prospects in Utah.

The American Bee Journal is still a welcome visitor and I hope, as it deserves, that more of its many friends will become subscribers.

While the bee-keepers in the greater portion of this state enjoyed a fairly prosperous season last year, the prospects for the coming season are even more encouraging, especially in the lower altitudes, some of which were a little too dry; but the unusually heavy precipitation of snow and rain insures an abundance of irrigation water, which in turn will insure a good honey-flow. E. S. Lovesy.

Salt Lake City, Utah, March 5.

Indications for a Honey Crop.

The indications for a honey crop the present season are very fine for this portion of California. We have had steady, soaking rains and vegetation is farther advanced at the present time than it usually is a month later. The bees are gathering some honey and

much pollen from the early flowers, and brood-rearing is going on rapidly, some colonies having 7 or 8 frames of brood, and some are already making preparations to swarm, having queen-cells built.

The crop last season was fairly good, but the price, as usual, was very low. After the long, dry year of 1904, the colonies were weak, but they soon built up, and my crop averaged 110 pounds of extracted honey per colony.

There is a good deal being written about gentle bees, non-stingers, etc., but, with my present location, give me the bee with the hot business-end. As long as they protect themselves from the depredations of thieves and looters, I can stand a few jabs from their little sabers while they are keeping in practice.

Although I am one of the "boys of 61," and am 65 years of age, I have worked nearly every day during what we call winter.

F. C. Wiggins.

San Diego, Calif., Feb. 20.

He's "Agin" the Japanese.

On page 138 mention is made of Japanese coming to Texas to engage in bee-farming and silk-culture. I do not approve of that class of people coming to this country. I live in California, right among them, and I know what they are. They are good workers, but totally unreliable. Besides, they live in any kind of hovels and live on the

most meager kind of food, so they can afford to work cheap, and the whites are either driven out or compelled to live likewise. We want a class of people that will raise our standards, not lower them. Last, but not least, they are a class by themselves, and will never mingle and intermarry to build up a future race of Americans as some other foreigners have.

Let us draw our colonists for Texas from another source. There are enough to spare from our crowded cities to fill the whole of that State. They would not have to learn the language, and, therefore, you would get subscriptions to your paper sooner!

M. D. Price.

Arroyo Grande, Calif., Feb. 19.

Fine Prospects for Honey.

Prospects for a honey crop are fine. Bees are in good shape, and are getting new pollen. Grant Anderson.

Sabinal, Tex.

Not a Heavy Rainfall.

Bees are in good shape, and for the present seem to be getting considerable nectar from the flowers now in bloom, but the weather is such as to keep the bee-keepers guessing on the future, as the rainfall has not been heavy enough to afford much hope for a crop. The bees are strong now, and will probably begin to swarm within a

month on the strength of last year's stores and what honey they can get afled; but unless there is considerable rain during the next two months, they will slacken up about the time the surplus should begin to come in.

J. B. Whitaker.
Fallbrook, Calif., Feb. 19.

CONVENTION NOTICES.

Utah.—The Utah Bee-Keepers' Association will hold their spring convention in the Mayor's office, in the City and County Building, April 6, at 10 a.m. Among other questions of interest to be considered will be the best approved methods for producing and disposing of bee-products. All are cordially invited to come and bring their friends.

G. E. GARRETT, Sec. E. S. LOVESY, Pres.


Michigan.—The Northern Michigan Bee-Keepers' Association will hold its next annual meeting at Kalkaska, Mich., Wednesday and Thursday, April 4 and 5, 1906. Generous prizes are offered for certain exhibits. W. Z. Hutchinson, E. D. Townsend and Geo. H. Kirkpatrick, the President, will read papers. Special hotel rates are given by the Manning House. Send to the Secretary for a copy of the announcement, list of prizes offered, etc. Then attend the convention if you possibly can do so.

IRA D. BARTLETT, Sec.
East Jordan, Mich.

North Texas.—The annual meeting of the North Texas Bee-Keepers' Association will be held at Blossom, Tex., Wednesday and Thursday, April 4 and 5, to which all bee-keepers are invited. There will be no hotel bills to pay. On the program are the following: "Best Races of Bees," W. H. Laws and Dr. R. P. Davies; "Foul Brood," Louis H. Scholl; "Which is the Best for North Texas, The Production of Section or Bulk Comb Honey?" R. C. Abernathy and Dr. R. P. Davies; "Extracted vs. Comb Honey for North Texas," R. C. Abernathy and Dr. R. P. Davies; "Is a Bee-Keepers' Association a Necessity?" W. H. White; "Is the Combining of Bee-Keeping with Poultry-Raising Profitable?" L. C. Lancaster; "Best Honey-Plants of North Texas," J. M. Haygood; "Best Hive for North Texas—8, 10 or 12 Frame," W. H. White; "How Best to Manage Our Bees for the Greatest Profit," Question-Box. W. H. WHITE, Sec.

Pennsylvania.—All bee-keepers and other persons interested are invited to meet in the second annual convention of the Pennsylvania State Bee-Keepers' Association, at State College, in Centre Co., Pa., March 29 and 30. The first session will be on the evening of the 28th, and on the 30th there will be two sessions. Among the persons who will be present and address the meetings on one or more topics are the following: Prof. E. F. Phillips, in charge of Apiculture, of the U. S. Department of Agriculture, Washington, D. C.; E. R. Root, E. L. Pratt, R. D. Barclay, L. R. White, of the Division of Zoology, Harrisburg, Pa.; Prof. H. A. Surface, President Pennsylvania Bee-Keepers' Association, and Pennsylvania State Zoologist, Harrisburg and State College, Pa.; Rev. D. L. Woods, and others. You are invited to come, ask questions, take part in the discussions, and propose topics for discussion. A detailed program is being prepared and will be published soon. There will be an exhibition of bee-keepers' supplies and appliances, different kinds of hives, honey and honey products, and different races of bees. In the apiary of the President, at the State College, there are all races of honey-bees kept on the American continent. Manufacturers of supplies or dealers are invited to send material for exhibition, and all room needed for this will be given free of charge. The College will give free rooms for meetings and also for lodging, and the expense while there need not be over \$1.00 per day. The railroad companies have given excursion rates upon two plans: 1st, East of Oil City and Pittsburg, Pa., a fare of one and one-third for the round trip will be given to persons presenting card orders for

excursion rates at the time of buying their tickets. These card orders will be sent free immediately by addressing either the Secretary or the President. Write at once. One must be used for each railroad system over which the excursionist is to travel, and West of Oil City and Pittsburg, Pa., the rates are to be given by certificate plan—the purchaser paying full fare for his ticket in going, and at the same time asking for a certificate (not a receipt) which will be "O.K.'d" upon presentation to the President at State College, and will then be good for purchasing return passage at one-third the regular fare. There will be at least 2 illustrated lectures, one of which will be the President's annual address on Thursday evening, the 29th, which will also be the session for the election of officers, and the other illustrated lecture will be that of Dr. Phillips, from Washington, probably Friday forenoon, the 30th. An interesting feature will be a demonstration of practical methods of handling bees before audiences by E. R. Root. All interested persons are invited to attend and bring their friends. Write at once to the undersigned for free card orders for excursion rates. H. A. Surface, State College, or Harrisburg, Pa., or Muncy, Pa. D. L. WOODS, Sec.



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ANGLE STEEL BED



This beautiful full angle steel Bed, substantially made, finished in White Enamel with polished brass knobs, in four sizes—will give you complete satisfaction. At \$2.98 it is a wonder and is cheaper than your home dealer can buy it. This steel Sanitary Bed Couch is an ornament to any room—cannot be told from an ordinary couch; can be quickly converted into a comfortable sanitary bed; finished in gold and aluminum. \$4.00 makes this a bargain you should not miss. It will practically add another bed room to your home. This solid oak Extension Table is a real bargain. Never before has there been offered so large and handsome a table for so small a price. You must see it to appreciate its true value. Finished in golden oak and is the best dining table for the price you ever saw. Send \$4.98—if it don't please you we take it back and refund your money. This handsome, well-built 3-section Book Case will put your library on a new system. Can add to it at small expense, as the number of your books increase. Comes in quartered oak, mahogany or plain oak finish—all hand rubbed and polished. Complete with three sections, base, cap and dust-proof

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We want to demonstrate in this advertisement how you can make money by buying furniture direct from us and saving all middle profits. Compare these prices with what your dealer asks you and remember—we pay the freight. You cannot match our qualities or our prices anywhere else.

STEEL SANITARY BED COUCH



glass doors—\$11.85 This Refrigerator is made of ash, with quarter sawed oak panels, golden finish, solid bronze hinges and lock, zinc lined, removable galvanized iron ice rack and flues, with slide adjustable provision shelves. A beauty and a bargain for \$7.90. This high grade, high arm, 3-drawer, ball bearing, drop head Sewing Machine, guaranteed for twenty-five years, is the biggest sewing machine bargain ever offered at our price, freight paid—\$15.25. Order any article listed in this advertisement on our positive guarantee of satisfaction or money back. We stand back of every sale and every article we ship out. They must be exactly as we represent them or no sale. Write today for complete furniture and sewing machine catalogs—see how we save you money all along the line.

Ask about our Special Plan which will save you \$150. to \$250. a year as long as you live.

Co-Operative Society of the
National Supply Co.
Lansing, Mich. Chicago, Ill.

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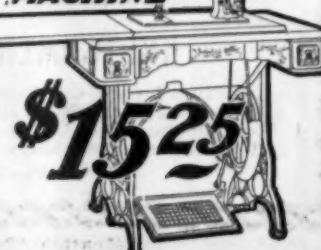
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REFRIGERATOR



DROP HEAD SEWING MACHINE



CHARLES MONDENG SECTION MACHINE



is covered by two Patents. With this wonderful invention the cost of making Sections may be reduced to \$1.15 per 1000. If such Machine will interest you, write for further information. Do not write about it unless you mean business.

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My Catalog for 1906 is now ready for distribution. I am the Northern Headquarters for Adel Queens and Bees, and good, honest Bee-Keepers' Supplies. If you have not received my Catalog, write for it. Address,

CHARLES MONDENG,

180 NEWTON AVE., N., MINNEAPOLIS, MINN.

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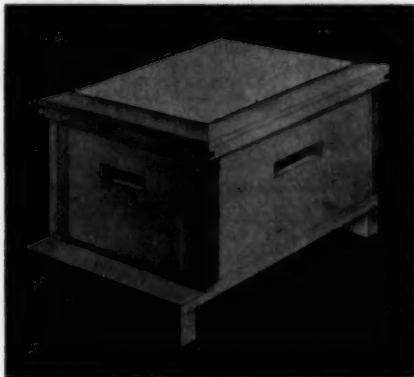
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Send for our 1906 Free Illustrated Catalog. Good Goods, Low Prices and Prompt Shipments are what you get if you send your orders to—

PAGE & LYON MFG. CO.

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WE know it is a good hive. We want YOU to know it, too. Here is a hive without dovetails. The corners are not nailed. It can be as easily taken apart as put together—in a few moments. Simple in construction.

We also have the Dovetailed and Langstroth Hives, Sections, Smokers, and everything used in the apiary.

See our special offer in last week's issue of American Bee Journal. You'd better write us to-day and order five of "THE ELGIN." A postal will bring you our price-list.

The National Supply Co.
ELGIN, ILL.

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We manufacture everything needed in the Apiary, and carry a large stock and greatest variety. We assure you the best goods at

LOWEST PRICES

and our excellent freight facilities enable us to make prompt shipments over 15 different roads, thereby saving you excessive freight charges as well as time and worry in having goods transferred and damaged. We make the

Alternating, Massie, Langstroth and the Dovetail Hives

Our prices are very reasonable, and to convince you of such we will mail you our free illustrated and descriptive catalog and price-list upon request. We want every bee keeper to have our Catalog. **SPECIAL DISCOUNTS** now. Write to-day.

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Catalogs issued in English or German.

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Root's Bee-Supplies

You know what this means. Four carloads of New Goods on hand. Our business increased last year 100 percent over 1904. This is a proof that we are saving our customers money. Try us. Low Freight Rates from Toledo. Large Discounts—that tells the story. Our 80-page Catalog is sent free.

GRIGGS BROS.

521 Monroe Street, TOLEDO, OHIO.

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BINGHAM
• Original
Direct Draft
GRASS
Bee Smokers

4 Largest Sizes Soot Burning

Never Go Out
And last from 5 to 21 years

OTISVILLE, PA., Jan. 18, 1904.

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OTISVILLE, PA., Jan. 18, 1904.
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Made of High Carbon coiled wire. We have no agents. Sell direct to user at factory prices on 30 days free trial. We pay all freight. Catalog shows 37 styles and heights of farm and poultry fence. It's free. Buy direct. Write today.

COILED SPRING FENCE CO.
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WANTED

Young man to take care of an apiary of 300 colonies, and carefully pack bee supplies for shipping. **TRESTER SUPPLY CO.**
9A1f LINCOLN, NEB.

AT MUSKOGEE, IND. TER.

An Apiary For Sale in a first-class district. One chance in a thousand to secure an up-to-date business on a home market. Address, **W. S. MITCHELL,**
9A4t NATIONAL SOLDIERS' HOME, TENN.

For Queens

He will furnish at the same prices as last year: Tested, \$1; Untested, 75c; 5 for \$3.25; 10 for \$6; 15 for \$8.25; 25 for \$12.50; 100 for \$45. He breeds Goldenes, Carniolans, and 3-Band Italians. Also 1, 2, and 3 frame Nucles and full colonies. Prices given on application. Pharr pays the freight, and guarantees satisfaction on all Queens. To do justice and judgment is more acceptable with the Lord than sacrifice.—(Prov. 3:21.) 5A1f

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The Lion Engine

is sold direct from
FACTORY to USER

Acting on the theory that "testing is proving," we will send any responsible person, on certain very easy conditions, one of our three h. p. gas or gasoline engines on 10 days test trial.

This engine is no experiment, but has been proved by actual use to do any work (where the rated amount of power is required) in the most practical, reliable, safe and economical way. This engine is of the four cycle type. While the engine is up to normal speed the exhaust valve is held open, allowing free circulation of fresh air in the cylinder. The igniter and intake valve are at rest, therefore are not using gasoline or the batteries.

Our igniter and mixer are of the most simple and reliable character. The gasoline is always properly vaporized and the igniter point never comes together unless a spark is required.

The fly ball type of governor is used, which automatically controls the exhaust, igniter and the gasoline; it also allows the speed to be changed from 100 to 600 revolutions per minute while the engine is in motion—a very superior feature.

LION GAS OR GASOLINE ENGINES

are simple in construction and

EASY TO OPERATE

They are used for all purposes where power is required for operating private electric-lighting plants, small factories, printing offices; farm machinery, such as cream separators, feed-grinders, corn shellers, wood-sawing machines, etc., and for a thousand and one other purposes.

WRITE US A LETTER LIKE THIS:

LYONS ENGINE CO.,
Lyons, Mich.

Gentlemen: I am about to purchase a gas or gasoline engine for _____ purpose and wish you to send me full particulars about your approval offer as advertised in American Bee Journal. Yours very truly,

Name _____

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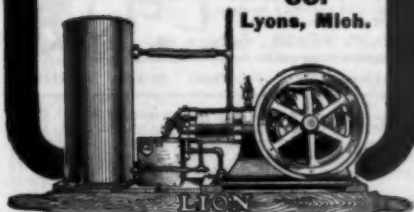
Street No. or P. O. Box _____

R. F. D. _____

When writing, please state definitely for what purpose you wish to use this engine and whether gas or gasoline is to be used for fuel. This information is very important to us. Please remember we send the engine, not the engine agent.

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All for \$1.

The Farmers' Tribune is the leading Live Stock Journal of the Northwest. The stationery is really free. It is printed on nice paper with your name, address and name of farm or business. We guarantee to deliver in 10 days from receipt of order.

Ask your printer what he will charge for such stationery. This will prove the unparalleled offer we are making you.

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Send for free sample copy of our great paper.

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Everything for the Apiary
Wholesale Agents for G. B. Lewis Co.
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BUY NOW—TAKE ADVANTAGE OF THE DISCOUNT.
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LOUIS HANSSEN'S SONS
DAVENPORT, IOWA

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Everything for the Bee Keeper

will be found in our Illustrated Catalogue No. 40. It contains a full line of Hives, Supers, Followers, Sections, Section Holders, Frames, Extractors, Smokers, etc. All these and many other essentials are manufactured by us. Everything is guaranteed to be right and of best quality. Our prices are so reasonable that any bee keeper may afford the best supplies. We cannot tell you here of all the good things in this book.

Better send for a copy today. We mail it free, together with a copy of the *Progressive Bee Keeper*, a splendid monthly publication devoted to bee interests. It will help you start right and keep you right after you are started. It is invaluable as an aid to every bee keeper. Ask for the paper and the book.

We Sell the Best Incubators and Brooders.

Delivered at your station, prices the lowest. Write us at once and save money. Address

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Branches at Omaha, Neb. and East St. Louis, Ill.



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Root's Goods at Root's Prices

Everything used by Bee-Keepers.
POUDER'S HONEY-JARS.

Prompt Service.
Low Freight Rates. Catalog Free.

If you wish to purchase finest quality of HONEY for your local trade, write for my free monthly price-list of honey.

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For cash orders before Feb. 1..6 percent

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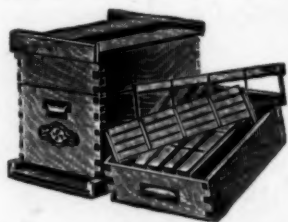
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WALTER S. POUDER,

513-515 Massachusetts Ave.,

INDIANAPOLIS, IND.

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BEE-KEEPERS' —AND— POULTRY SUPPLIES

LEWIS' BEEWARE

is so well known it needs no introduction. 2 percent
Discount on Bee-Supplies for March.

Beeswax wanted—28c cash, 30c when taking bee-supplies in exchange.
Extracted Honey For Sale.

Prices on application. Sample, 10 cents.

Cornell Incubators, Peep O' Day Brooders
and Cornell Chick Machinery

ARE
UNEXCELLED

The 1906 Cornell Incubator is superior to anything heretofore
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New 1906 Catalog for either line Free.

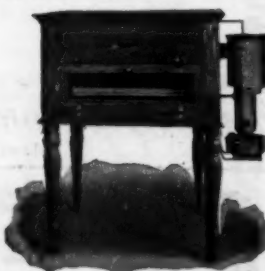
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H. M. ARND, MGR.

141 Ontario Street, - CHICAGO, ILL.

Long Distance 'Phone, North 1559.



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Everything the bee-keeper needs. Distributing house for Lewis' Goods at Factory
Prices. Now is the time to buy for next season.

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FINE EXTRACTED HONEY in cans or barrels. The best the world can produce
Samples 8 cents, to pay postage and packing. How much can you use? Prices quoted quick
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We buy BEESWAX at all times in the year. Send for our Catalog and "Special"
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Why put up with
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have the Best?

They cost you no
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I can save you money. In all cases I
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Remember, I have been over 20 years in the
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dollars worth of goods now on hand, ready
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reached by direct lines, thus insuring the
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Write for estimates and new Catalog. Lib-
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=PURE ALFALFA- HONEY

IN 60-POUND CANS

We have a good supply of Pure Alfalfa
HONEY in 60-pound cans that we can
ship by return freight at these prices: 2 cans,
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one time, 8 cents a pound—all f.o.b. Chi-
cago. Cash with order. Sample, by mail, 8
in stamps, to cover package and postage.

Address,

YORK HONEY AND BEE CO.

141-143 Ontario St., CHICAGO, ILL.

Passengers east from Buffalo to
Fort Wayne, Findlay, Fostoria, Cleve-
land, Erie, Buffalo, New York City,
Boston, and all points east, will con-
sult their interests and find advantage
in selecting the Nickel Plate Road east
from Chicago. Three through trains
are run daily, with through day
coaches to New York City, and modern
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Rates always the lowest, and no excess
fares are charged on any train, for any
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ranging in price from 35 cents to one
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tickets via the Nickel Plate Road.
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Ticket Office, 111 Adams St. Detailed
information may be secured by address-
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12.80 For
200 Eggs
INCUBATOR

Perfect in construction and

action. Hatches every fertile

egg. Write for catalog to-day

GEO. H. STAHL, Quincy, Ill.



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65c for 12 Names For names and P.O. of

12 farmers and 15c-

stamps taken—we will send for 2 yrs. the Farmer's

Call—reg. sub. price 40c a year. F. C. is a wkly., 25

years old, 1,500 pages a year. Sample free.

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Lowest Prices

Big Discount for Early Orders

On Cash Orders

Before November 1.....	9 per cent
" December 1.....	8 "
" January 1.....	7 "
" February 1.....	6 "
" March 1.....	4 "
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Bee-Supplies

OF ALL KINDS

Established Nearly 25 Years

We have published THE AMERICAN BEE-KEEPER for 15 years (monthly, 50c a year.) The largest and best illustrated magazine of its kind for the price published. Edited by two of the most experienced bee-keepers in America.

Sample copy free.

Our large, illustrated Price-List of Supplies free on application. Address,

The W. T. Falconer Mfg. Co.

JAMESTOWN, N. Y.

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Honey and Beeswax

CHICAGO, March 7.—Choice white comb honey is not plentiful, and it sells upon arrival at 15c per pound. Other grades of comb are not in demand and sell at uncertain prices of 10@14c per pound. Choice white extracted, 6½@7½c; amber grades, 5½@6½c. Beeswax, 30c per pound. R. A. BURNETT & Co.

TOLEDO, Feb. 19.—The market for comb honey has been better for the past two weeks than at any time during the past season. Prices are firm on account of the scarcity. We are getting 15@16c for fancy white clover; 14@15c for No. 1, and 13@14c for amber. Buckwheat, 13c. Extracted honey is in good demand at following prices: White clover in barrels brings 6½@7c; amber, 5½@5¾c; in cans every grade from 1@1¼c higher. Beeswax is firm and in good demand at 28 and 30c.

The above are our selling prices, not what we pay. GRIGGS BROS.

INDIANAPOLIS, Feb. 2.—Fancy white clover comb brings 16c; No. 1, 14c; demand exceeds the supply; fancy white western comb brings 14@15c; amber grades in poor demand at 12c. Best grade of extracted honey brings 8¼@9c in 60-pound cans; amber, 6c. Good average beeswax sells here for \$33 per 100 pounds. WALTER S. POWDER.

PHILADELPHIA, March 10.—The call for honey is falling off, and while the supply is not abundant, yet it equals the demand. We quote fancy white, 16@17c; amber, 13@14c. Extracted, white clover, 7@8c; amber, 6@7c. Beeswax firm, 28c.

We are producers of honey and do not handle on commission. WM. A. SELSER.

NEW YORK, Feb. 19.—The demand is fairly good for better grades of white, and while the near by crop is fairly well cleaned up, new arrivals are now coming in from Cuba, besides several cars have been shipped on from California. We quote fancy white at 15c; No. 1, 13@14c; No. 2, 12c; amber, 11c; buckwheat, 10@11c. Extracted in fairly good demand, especially California, of which there is abundant supply. We quote white sage, 6½@7½c; light

Headquarters for Bee-Supplies

Complete Stock for 1906 now on hand.

FREIGHT-RATES FROM **CINCINNATI**

are the **LOWEST, ESPECIALLY** for the **SOUTH**

as 'most all freight now goes through Cincinnati.

Prompt Service is what I practice.

You will

Satisfaction Guaranteed.

SAVE MONEY BUYING FROM ME.

Catalog mailed free. Send for same.

4 Percent Discount for March

Let me book your Order for

QUEENS

bred in separate apiaries, the **GOLDEN YELLOWS, CARNIOLANS, RED CLOVERS** and **CAUCASIANS**.

For prices, refer to my catalog, page 29.

C. H. W. WEBER

CINCINNATI OHIO

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

amber at 6@7c, according to quantity; buckwheat at 6c per pound; Southern at 50@60c per gallon, according to quality. Beeswax steady at 29@31c. HILDRETH & SEGELKEN.

CINCINNATI, March 8.—The demand for comb honey has brightened considerably since we last reported; in all probability, by the close of April, the market will be bare of comb honey. This will be encouraging to the bee-keeper. Nevertheless, to advance the price is out of the question; therefore, we continue to quote fancy white comb honey at 14@15c. The demand for extracted honey does not come up to our expectations; we quote amber at from 5½@6½c, according to the quality; fancy white, in 60-lb. cans, 8c. Choice bright, yellow beeswax, 30c. THE FRED W. MUTH CO.

DEWEY, Feb. 5.—Owing to the mild weather the demand for honey has not been as good as usual at this time of year. We are quoting strictly No. 1 white alfalfa comb honey at \$3.35 to \$3.75 per case of 24 sections; off grade and light amber at \$3 to \$3.30. White extracted alfalfa in 60-pound cans, 7½@8½c; light amber, 6½@7½c. Beeswax, 24c for clean yellow. THE COLO. HONEY-PRODUCERS' ASSN.

KANSAS CITY, March 16.—The supply of comb honey is not very large. Demand is light, best 24 section white selling at 3.25 per case, amber at 25@50c per case less. Extracted, white, 6½c per pound; amber, 6c. Beeswax, 25@30c. We look for an increased demand in the near future. C. C. CLEMONS & Co.

CINCINNATI, March 7.—The demand for comb honey is slow, prices obtained are the same. Stock on hand seems to be sufficient to supply the wants. Quote fancy white, 14@16c. Amber extracted in barrels, 5½@5¾c; in cans, ¼c more; fancy white clover in 60-lb. cans, 7½@8½c; Southern, equal to white clover in color, from 6½@7c. Bright yellow beeswax, 30c. C. H. W. WEBER.

HONEY AND BEESWAX

When consigning, buying or selling, consult

R. A. BURNETT & CO.

199 SOUTH WATER ST. CHICAGO, ILL.

ONE TON

White Clover Honey

Candled—a 60-pound can, \$6. Cash and instructions sent to Farmers' Bank.

JOHN C. STEWART

8Atf HOPKINS, MO.

Mention Bee Journal when writing.

FOR SALE

Until further notice, finest quality new crop California Water-White White Sage and Light Amber HONEY in 60-lb. tins, 2 in a case; new cans and new cases. Write for prices and samples, and state quantity you want.

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265 & 267 Greenwich Street, NEW YORK, N.Y.

34Atf Please mention the Bee Journal.

Cash for Beeswax

Highest market price paid promptly all the time for good wax.

Frank G. Clark, 147 E. Kinzie St. Chicago, Ill.

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FANCY WHITE EXTRACTED HONEY

CRATES 2-60 LB. CANS; 8c

TWO OR MORE CRATES; 7½

LARGER LOTS; WRITE FOR SPECIAL PRICES. ALL F. O. B. CINCINNATI. CASH WITH ORDER. SAMPLES 10c. TO PAY POSTAGE.

THE FRED W. MUTH CO.

No. 51 WALNUT STREET, CINCINNATI, OHIO. SEND FOR CATALOG OF BEE SUPPLIES WITH SPECIAL DISCOUNT.

The supply-dealer, if honest, has a difficult position. As I said at the Chicago Convention, so I say now, with too few exceptions he has to deal with men in an industry, comparatively few of whom realize the value of the very best of equipments. He has to cater to a trade which is looking over catalogs or to other sources for the hive, which can be bought not for the lowest price, but for the least momentary outlay, even if it is a gross extravagance to use them from year to year. Speaking in a general way right here, special factories may sometimes make goods rough, inaccurate, and not uniform; but home-made and local factory goods are always that way. Hives and all their equipments require accuracy and smoothness, as fixtures in connection with no other stock do. If the interiors of hives are not smooth the bees keep propolizing them; if bee-spaces are not accurate, propolis and comb-building lead to constant inconvenience in handling, and loss of time and loss of temper to those about. I therefore decided on factory-made goods, and willingness to allow a fair profit after paying the expense of having good machines operated by skilled hands.—R. F. HOLTERMANN, Brantford, Canada.—March 1st "Gleanings in Bee-Culture."

AT THE LEWIS FACTORY

the greatest pains are taken to see that all goods are made scientifically correct.

Lewis goods go together right. Why? Because they are right.

Every part is made to fit every other part just like a watch. Perfect matching, necessary bee-spacing, accurate dovetailing, correct grooving, careful polishing, besides a thousand and one other details of manufacture are all brought to bear as a result of the 30 years' of experience of the Lewis Beeware specialists.

This has brought about the manufacture of a smooth, clear, clean, white hive which strikes joy to the bee-keeper's heart.

Lewis Sections are made from white Wisconsin basswood, the finest in the world. Lewis Sections are the best in the world; they ought to be, they are the most carefully selected, and accurately made.

Insist on Lewis Goods; accept no substitute. Look for the brand; send for Catalog to-day if you haven't one. There are a score of our agents who can furnish you with Lewis' Goods at factory prices. They are:

ENGLAND—E. H. Taylor, Welwyn, Herts
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SOUTHERN CALIFORNIA—Paul Bachert, Lancaster
Fletcher-Doyle Co., San Diego
Fallbrook Co-operative Ass'n, Fallbrook
COLORADO—R. C. Alkin, Loveland
Arkansas Valley Honey-Producers' Association, Rocky Ford

COLORADO—(Continued.)
Colorado Honey-Producers' Association
Colorado Fruit-Growers' Association, Grand Junction
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MINNESOTA—Wis. Lumber Co., Faribault
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OREGON—The Chas. H. Lilly Co., Portland
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